



State of Utah

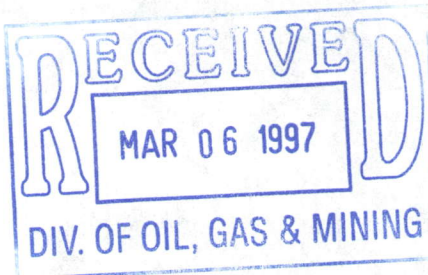
DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER QUALITY

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March 3, 1997

Ms. Elaine J. Dorward-King, Ph.D.
Director, Environmental Affairs
Kennecott Utah Copper
8315 West 3645 South
Magna UT 84044-6001

Dear Ms. Dorward-King:

Subject: Review of Standard Operating Procedures for Kennecott Acidification Monitoring Program; Kennecott Tailings Impoundment; Ground Water Discharge Permit No. UGW350011

Review of the revised Standard Operating Procedures (SOP's) provided in your letter of January 31, 1997 is complete. There are a few changes needed in SOP #1 and #2 before final approval can be given (SOP #3 is complete).

Attached are marked up copies of the pages from SOP #1 requiring changes. These changes are very minor editorial changes with one possible exception. One of these is the drying temperature to be used for samples. The temperature used for drying should be no higher than 50°C instead of 80°C.

Another issue relating to SOP #1 is the weight correction factor applied to results obtained following the HCL leach and the HNO₃ leach. After contacting several other labs doing ABA analysis, it appears that some labs do utilize this calculation but only when there is a high lime content in the sample (i.e. 20 to 25% CaCO₃). Based on the neutralization work done to date with Kennecott's Tailings, there should not be any samples with a high CaCO₃ content with the single exception being samples taken from the lower portion of the existing embankment. Accordingly, if Kennecott would like to utilize the correction factor, please also provide data that is not corrected for comparison. After the initial years worth of samples are analyzed and the data from both calculations can be compared, the Division will determine if the weight correction approach has any merit and should be continued.

14/035/015

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Elaine J. Dorward-King
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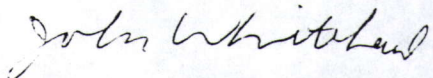
To clarify results reported from kinetic testing described in SOP #2, the following items should be added to Section V of SOP #2:

1. For each kinetic test, a cumulative plot of sulfate production will be included.
2. For kinetic tests that are terminated after 20 weeks, the calculations for determining if a test should be extended as noted in Item IV B will be included.

In addition to the specific items in SOP's #1 and #2, the text of Appendix A contains references to the previous SOP's numbered 1 - 6. Since the SOP numbers have been changed to accommodate the consolidated SOP #1 which replaced SOP's 1 - 4, a revised version of Appendix A that reflects the new SOP numbers is needed. Since the last version of Appendix A was supplied by DWQ, attached is a revised version with SOP references changed to reflect the current SOP numbering system.

Would you please supply revisions to SOP's #1 and #2 no later than March 31, 1997. Assuming all changes are made as noted herein, this should be the final version of Appendix A and attached SOP's. A formal approval letter will be issued following receipt of the revised SOP's. Thank you for your cooperation and patience in this matter.

Sincerely,



John Whitehead, Ground Water Hydrologist
Ground Water Protection Section

Attachments

JW:wlm

cc: Terry Sadler, Salt Lake County Health Dept.
Wayne Hedberg, DOGM
Gene Farmer

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FILE:Kennecott Tailings Impoundment